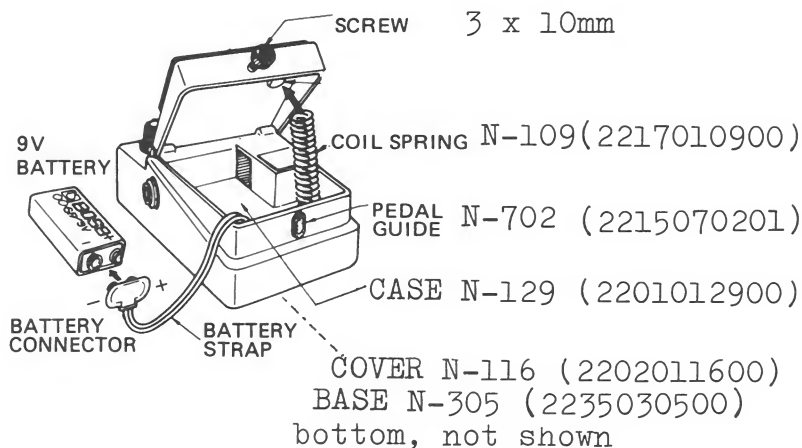


# BOSS PH-1R SERVICE NOTES

*First Edition*

## SPECIFICATIONS

Power .....	Battery 9V (1)
	AC Adaptor
Current draw .....	11mA at 9V
Phase shift .....	4 steps, 720°
LFO Speed .....	16 sec ~ 100msec
SN ratio .....	Over 90dB (IHF-A)
Input impedance .....	470kΩ
Output load impedance .....	Over 10kΩ
Maximum input .....	-5dBm
Gain .....	UNITY 1
Dimensions .....	70(W) × 55(H) × 125(D) mm
Weight .....	400g

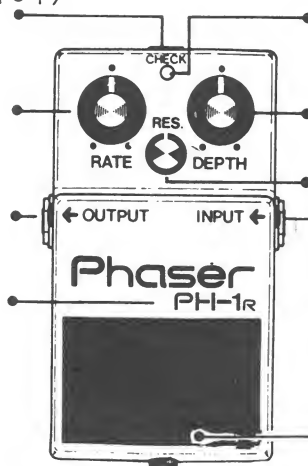


Jack HEC-0003 (13449702)  
or  
HEC-0317-1-1 (13449704)  
(detail on parts list)

Pot. VM10AS15 1MC  
(13229509)  
Knob TK-1122 (2247010500)

Jack SG-7622 (13449106)

Pedal N-516 (2218051600)



LED SLP-135B (15029117)

Pot. VM10AS15 100KB (13229514)

Pot. VM10AS15 10KB (13229510)  
Knob TK-1140 (2247012500)

Jack SG-7713 (13449104)

Base N-304 (2235030400)

## PARTS LIST

Parts are designated in 8-10 digits accompanied by previous 6 digit number, if had, for cross reference.

N- before abridged part number stands for NEW.

### PCB

7521351001 . . . Assy ET5213-510A (pcb 2291031300)

### POTENTIOMETER

13229509	028-466	VM10AS15	1MC
13229510	028-447	VM10AS15	10KB
13229514	028-450	VM10AS15	100KB

### SEMICONDUCTOR

15139101	017-014	2SK30A(TM)-Y	FET
15129108	017-110	2SC945-P	transistor
15129104	017-104	2SC732TM-GR	transistor
15139103A	017-016	2SK30A(TM)-GR	selected for phase see detail on back page
15019103	018-014	1S2473	diode
15019523	018-075	RD5.1EB-3	zener
15019547	018-039	RD11EB-3	zener
15029117	019-034	SLP-135B	LED
15189105	020-097	uPC4558C	BP MON Dual op amp
15189115	020-164	TL022CP	BP MON Dual op amp

### JACK

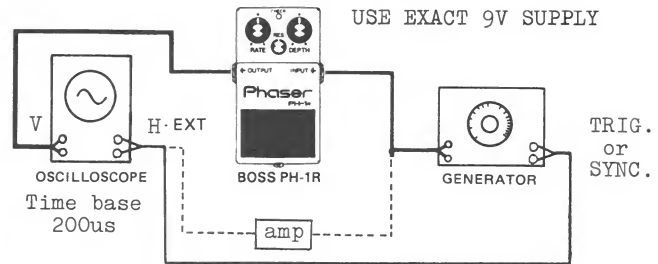
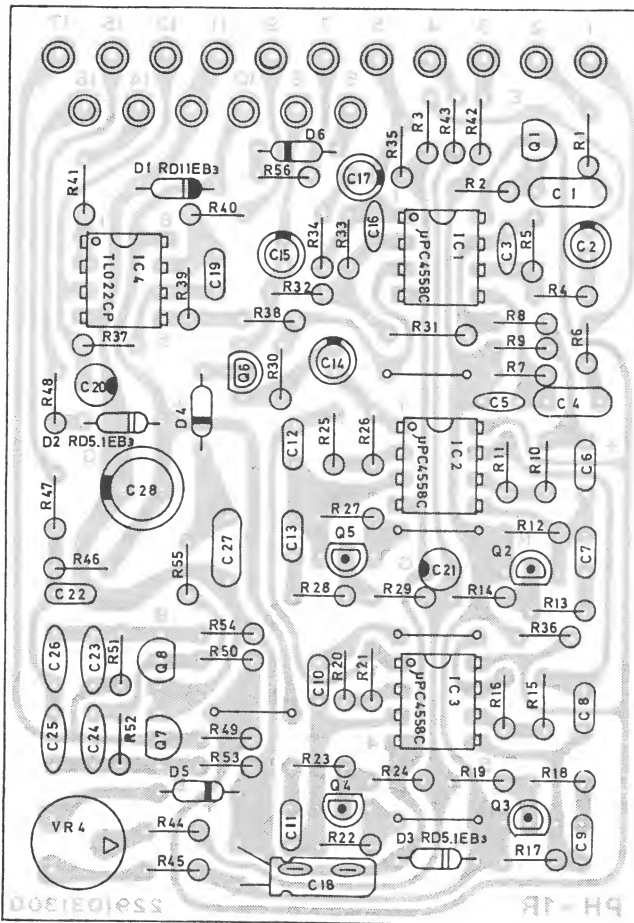
13449702 009-022 HEC-0003 (w/SCO mark)  
or  
13449704 . . . HEC-0317-1-1 (HOSHIDEN)

\*Differences in size: body and case's mounting hole.  
Type -0003 can replace -0317 jack.

NEW	OLD	PART NAME	
2201012900	066-048	Case N-129	green
2218051600	065-255	Pedal N-516	green
2202011600	065-130	Cover N-116	bottom
2235030500	111-032	Base N-305	bottom
2235030400	111-031	Base N-304	pedal matt
2215070201	068-026	Guide bushing	N-702
2226030500	107-053	Cushion N-305	pcb
2216050200	065-153	Spacer N-502	pcb
2217010900	070-059	Spring coil	N-109
2247010500	016-025	Knob TK-1122	
2247012500	016-068	Knob TK-1140	
13129710	001-295	Switch J-M0404	

## ADJUSTMENT and CHECKING

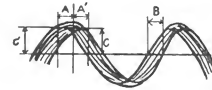
ET5213-510A (7521351001)  
(pcb 2291031300)



## 1. BIAS ADJUSTMENT



Test Signal:  
1kHz, sine -20dBm



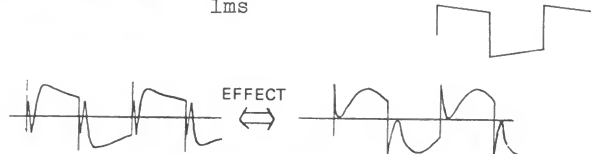
Test signal can be shifted to within the range 900-1100Hz to meet the specification. Adjust VR4 for A=A' or C=C'. B=more than 0.15ms. Turn DEPTH fcw. The same spec for 850-1150Hz.

## 2. WAVEFORM CHECKING



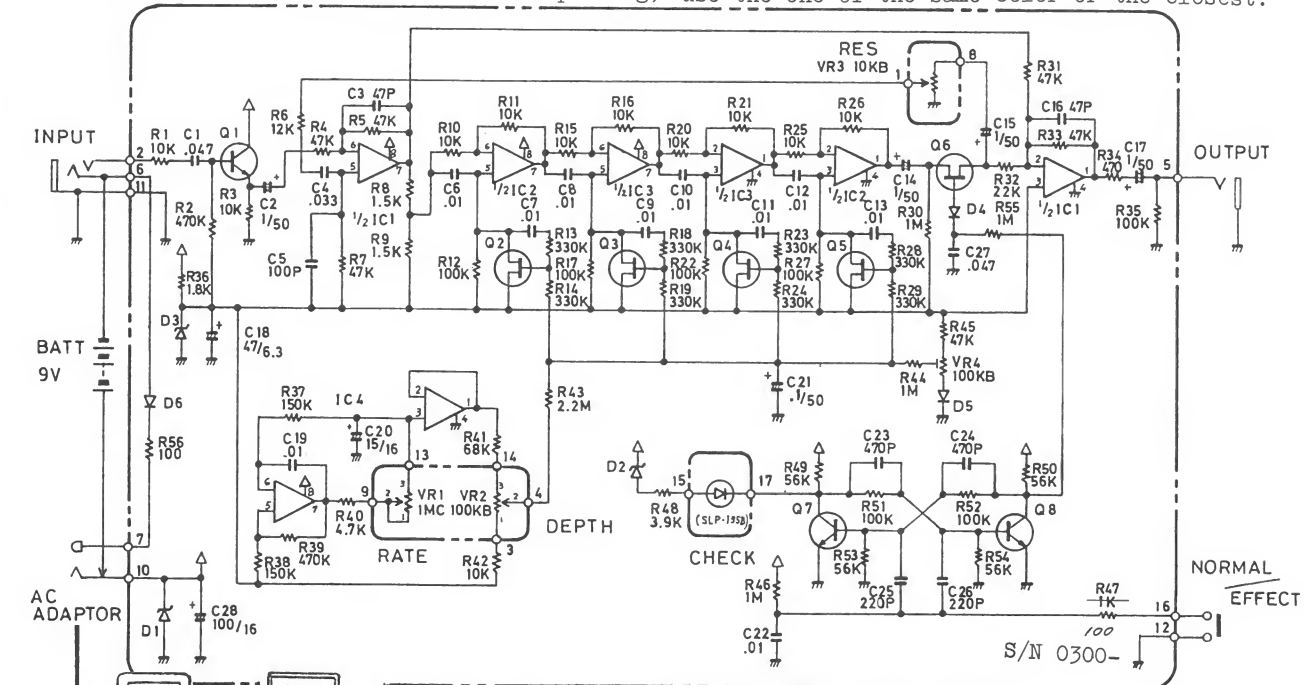
Test Signal:  
200Hz, square, 80mV pp  
Scope Time Base  
1ms

NORMAL



Waveform Changing Time: approx. 16S.

2SK30AGR's for Q2-Q5 are a set of factory selected ones; graded based on Pinch-Off, and dotted in a color of the standard code. When replacing, use the one of the same color or the closest.



IC 1-3: uPC4558C

IC 4: TL022CP

Q 1: 2SC732TM-GR

Q 2-5: 2SK30A-GR selected

Q 6: 2SK30A-Y

Q 7,8: 2SC945-P

D 1: RD11EB3

D 2,3: RD5.1EB3

D 4-6: 1S2473

HEC-0003

HOSHIDEN  
HEC-0317-1-1

S/N 0300-

NORMAL  
EFFECT